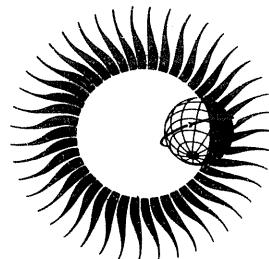


**WORLD DATA CENTER A
for
Solar-Terrestrial Physics**



**CATALOGUE OF
DIGITAL GEOMAGNETIC VARIATION DATA
AT
WORLD DATA CENTER A
FOR
SOLAR-TERRESTRIAL PHYSICS**



JULY 1974

WORLD DATA CENTER A
National Academy of Sciences
2101 Constitution Avenue, N. W. Washington, D. C., U.S.A., 20418

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and eight subcenters:

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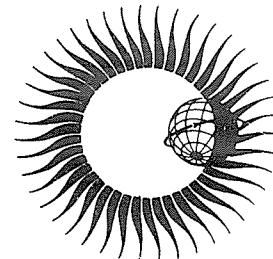
Notes:

- (1) World Data Centers conduct international exchange of geophysical observations in accordance with the principles set forth by the International Council of Scientific Unions. WDC-A is established in the United States under the auspices of the National Academy of Sciences.
- (2) Communications regarding data interchange matters in general and World Data Center A as a whole should be addressed to: World Data Center A, Coordination Office (see address above).
- (3) Inquiries and communications concerning data in specific disciplines should be addressed to the appropriate subcenter listed above.

WORLD DATA CENTER A for Solar-Terrestrial Physics



CATALOGUE OF DIGITAL GEOMAGNETIC VARIATION DATA AT WORLD DATA CENTER A FOR SOLAR-TERRESTRIAL PHYSICS



JULY 1974

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CATALOGUE OF DIGITAL GEOMAGNETIC VARIATION DATA
AT WORLD DATA CENTER A FOR SOLAR-TERRESTRIAL PHYSICS

I. INTRODUCTION

As high speed computers have become more readily available, the number of requests for digital geomagnetic variation data has steadily increased. To meet these needs we have endeavored over the past decade to collect all geomagnetic data available in this form, in addition to those in tabular formats. This catalogue lists all of the geomagnetic data available on magnetic tape in World Data Center A for Solar-Terrestrial Physics. Other information of interest is also provided.

II. SOURCES OF DATA

The geomagnetic variation data available on magnetic tape were obtained from many sources and institutions. They are as follows:

1. Hourly Values

- a. Yearbooks, microfilm, bulletins, etc. from the observatories.
- b. Magnetic tapes, punched cards, or punched paper tape from the observatories.
- c. Means of 2.5 minute values as derived by the National Geophysical and Solar-Terrestrial Data Center, Environmental Data Service, NOAA.

2. 2.5 Minute Values

- a. Digitizing the magnetograms with the aid of automatic or semi-automatic equipment.
- b. Converted from data recorded directly on magnetic tape at one-minute (or shorter) intervals.

3. K-Indices

International Union of Geodesy and Geophysics, International Association of Geomagnetism and Aeronomy.

4. Kp-Indices

Magnetic tape prepared by the European Space Research Organization from the data supplied by the Geophysikalische Institute of the University of Göttingen. These data are included on a tape containing other solar and geophysical parameters, among them the day of the solar rotation cycle, Ap, Cp, and C9.

5. Dst-Indices

Goddard Space Flight Center, National Aeronautics and Space Administration.

6. AE-Indices

Those listed below were derived from 10 to 11 observatories well spread in longitude.

Hourly AE Jul 1957-Dec 1964 Geophysical Institute, University of Alaska.

2.5 Minute AE Sep 1964-Dec 1965 Goddard Space Flight Center, NASA.

2.5 Minute AE Jan 1966-Dec 1970 National Geophysical and Solar-Terrestrial Data Center, EDS, NOAA.

7. Kn, Ks, and Km Indices, Faculté des Sciences de Paris, Institut de Physique du Globe.

8. aa Indices, Faculté des Sciences de Paris, Institut de Physique du Globe.

III. OTHER DIGITAL DATA AVAILABLE AT WORLD DATA CENTER A

Within the past few years a number of observatories have begun direct digital recording of magnetic variations at one minute (or shorter) intervals. Copies of a small number of these recordings have been furnished to the World Data Centers. Information regarding the observatory-intervals for which these data are available will be furnished on request.

IV. MAGNETIC INDICES AVAILABLE IN COMPUTER FORMAT

During this century many types of indices have been derived to show magnetic activity. A list of those available on magnetic tape is as follows:

1. K from individual observatories	1969-1972
2. Kp	1932-Present
3. Dst	1957-Present
4. AE (Hourly-1966 onward based on 10 or 11 observatories)	1957-1970
5. AE (2.5 Minute-1966 onward based on 10 or 11 observatories)	1957-1970
6. aa	1868-1967
7. Kn, Ks, Km	1959-1970

✓ It is planned to continue preparation of the AE hourly and 2.5 minute indices from 1971 onward.

V. COST OF COPYING AND INFORMATION ON ORDERING

The cost of a direct tape-to-tape copy of any of the data listed in this catalogue is \$50.00 plus the cost of a blank tape. However, if specific observatory-intervals of data are required the cost will depend on the number of magnetic tapes used in abstracting the required data. The data available at the present time are stored on approximately 130 (2400-foot) tapes. The cost of copying data for specific observatory-intervals will be furnished on request to the Data Center.

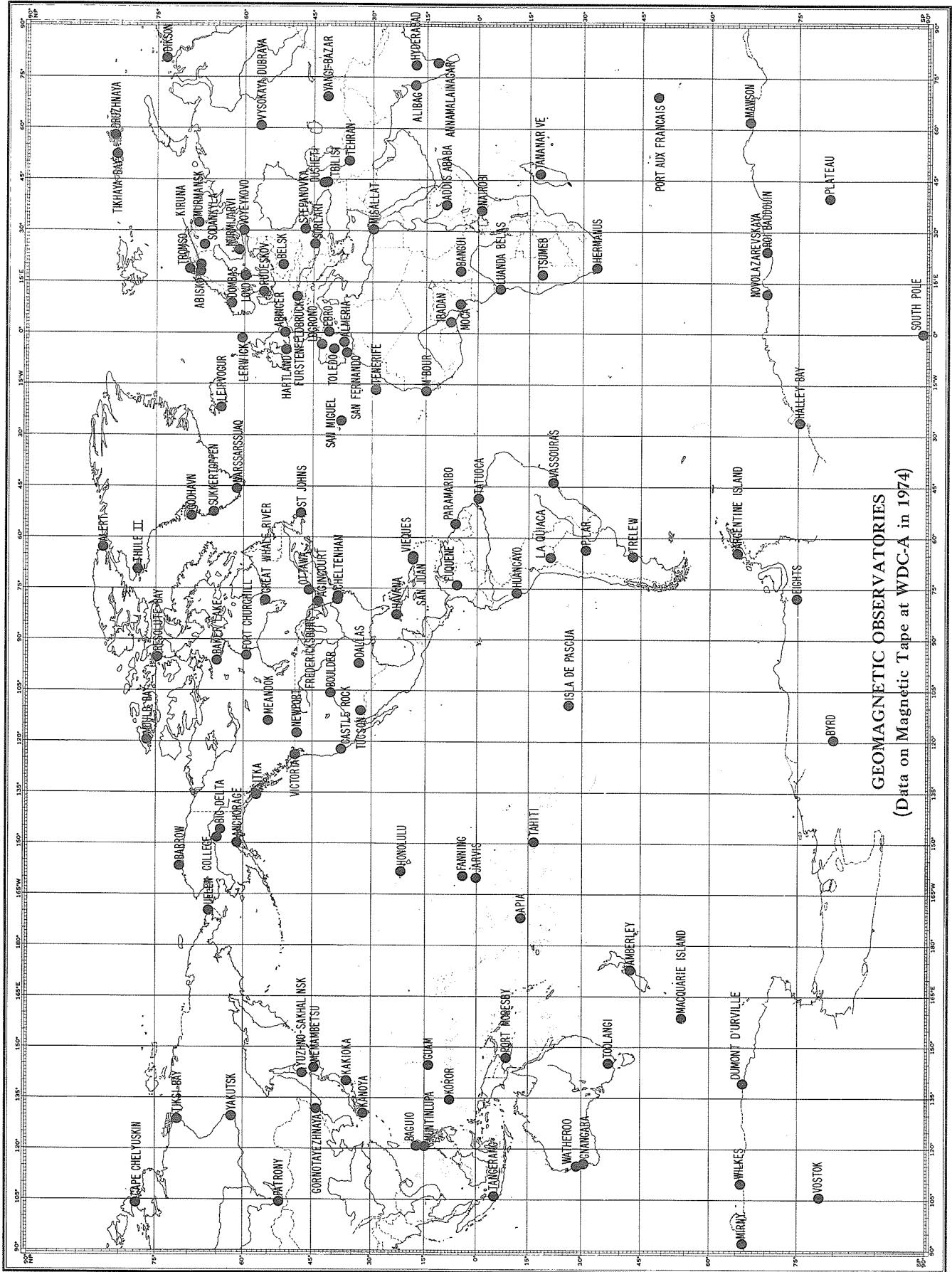
VI. MAP

The observatory names indicated on the map are those used in the catalogue of hourly and 2.5 minute values. These are not necessarily the preferred names used in the Master Station List of World Data Center A for Solar-Terrestrial Physics which covers all disciplines at the Data Center. Of course the amount of digital data available varies observatory to observatory. The details are presented in the catalogue.

VII. EXPLANATION OF THE CATALOGUE OF HOURLY AND 2.5 MINUTE VALUES

In the following numbered paragraphs are given explanations of the column headings as found in the actual catalogue presented in Section X.

1. The observatory names are shown in the first column of this catalogue. Other names for an observatory at this, or a nearby geographic site, are shown in the second column following these names. A list of alternate observatory names is also given on page 5 in Section IX.
2. A two-or three-letter mnemonic code as adopted by IAGA in its Bulletin 12 (later 32) Series is shown after each observatory.
3. In most cases the geographic coordinates were furnished by the institutions operating the observatories. The geomagnetic coordinates are based on the standard centered dipole (78.5°N and 291.0°E). In most cases where the observatory moved, but the name remained unchanged, the coordinates are given for the current site.
4. The catalogue shows the observatory-months for which hourly and 2.5 minute magnetic values are available on magnetic tape. In most cases three elements (D, H, and Z or X, Y, and Z) are available.



GEOMAGNETIC OBSERVATORIES
(Data on Magnetic Tape at WDC-A in 1974)

Index prepared on Miller's Modified Mercator Projection

VIII. MAGNETIC TAPE FORMATS FOR HOURLY AND 2.5 MINUTE VALUES

The following tape format was adopted by IAGA at the Madrid meeting in 1969:

Position

1-3	Observatory Mnemonic Code, left adjusted.
4-5	Year, last two digits
6-7	Month (01-12)
8	Element (D, H, Z, F or X, Y, Z, F)
9-10	Day (01-31)
11-12	Blanks
13-15	Arbitrary
16	Blank for data since 1900, '8' for data prior to 1900.
17-20	Tabular base, in degrees for D and I, hundreds of gammas for the intensity elements. The bases are right adjusted and signed if negative. Negative values are identified with a minus sign either adjacent to the first significant digit or in the high-order position of the field (position 17).
<p><u>NOTE:</u> A blank digit will not appear between a minus sign and the first significant digit. For example, a base may appear as -050 or b-50 but not as -b50 (b=blank).</p>	
21-116	Twenty-four 4-digit Hourly Values for the day. The values are in tenth-minutes for D and in gammas for the intensity elements. The first hourly value represents the mean value between 00h and 01h....the 24th value represents the mean value between 23h and 24h. Rules for negative values are the same as those described for tabular bases. A missing value is identified by a 9999.
117-120	Daily Mean. Rules for negative values are the same as those described for tabular bases. If any of the hourly values for the day are missing, a 9999 will appear as the mean.

The 26 values in positions 21-120 will have the range -999 to 9998, with 9999 reserved for missing values. To avoid a 4-digit negative value in positions 21-116, the tabular base will be adjusted for that day, for example for D, one degree is subtracted from the base and 600 units are added to each of the hourly values for the day-- for the intensity elements, 500 gammas are subtracted from the base and 500 gammas are added to each of the hourly values for the day.

Each tape block contains 20 records (2400 characters). A standard inter-record gap appears between tape blocks. When necessary, padded nines are used to complete the last block of data. Two or more tape marks follow the last block of data.

The records are sorted according to observatory mnemonic, year, month, element, day (positions 1-10).

NOTE: The same format is used for 2.5-minutes values, except positions 11-12 contain the hour (00-23), and the first data value is for 2.5 minutes past the hour. For 2.5 minute values the hourly mean appears in positions 117-120, if more than 20 2.5 minute values are missing the mean will appear as "9999".

NOTE: For those unable to use alphabetic identifications or month-day notation, the following is suggested:

- a) observatory code... use a 2 or 3 digit code.
- b) element... 1=D, 2=F, 3=H, 4=I, 5=X, 6=Y, 7=Z.
- c) month-day... leave positions 6-7 and 9-10 blank and place day number in positions 13-15.

Sample Computations Showing Use of Tabular Bases

	D	H	Z	X	Y
Tabular Base	-006	155	-485	-025	090
Hourly Value	-623	-032	-096	26	250
Total Value	-7°02.3'	15468	-48596	-2474	9250

As shown above, the value of a magnetic element at any particular time is obtained by adding the signed tabular base to the signed value.

The customary geomagnetic convention is followed: all magnetic values are referred to the north-seeking end of the compass needle, with X regarded as positive when directed northward, Y as positive when directed eastward, Z as positive when directed downward, and D as positive when directed eastward.

Where data are digitized in a semi-automatic manner from normal magnetograms, only one sample should be taken each 2.5 minutes.

When the basic data are obtained from an automatic digital instrument with a very rapid sampling rate it is recommended that only one sample per minute be preserved for the World Digital Data Centers.

IX. ALTERNATE OBSERVATORY NAMES

For various reasons many observatories are known by more than one name. In the following list the observatory names shown in the first column are the ones used in this catalogue. The second column shows another name by which these observatories are known.

ABINGER	HARTLAND
DIKSON	DIXON
DRUZHNAIA	HEISS IS
DUMONT D'URVILLE	TERRE ADELIE
DUSHETI	TBILISI
EBRO	TORTOSA
FORT CHURCHILL	CHURCHILL
GORNOTAYEZHNAYA	USSURISK
HAVANA	CUBA
ISLA DE PASCUA	EASTER ISLAND
LUANDA BELAS	LUANDA
PATRONY	IRKUTSK
PORT-AUX-FRANCAIS	KERGUELEN
ROI BAUDOUIN	BAUDOUIN
RUDE SKOV	COPENHAGEN
SAN JUAN	PUERTO RICO
STEPANOVKA	ODESSA
TIKHAYA BAY	HEISS IS
TIKSI BAY	TIXIE BAY
UELEN	CAPE WELLEN
VOYEYKOVO	LENINGRAD
VYSOKAYA DUBRAVA	SVERDLOVSK
WATHEROO	GNANGARA
YANGI-BAZAR	TASHKENT

CATALOGUE OF HOURLY AND 2.5 MINUTE VALUES ON MAGNETIC TAPE

MAGNETIC TAPE	NAME MASTER STATION LIST	CODE ON TAPE	GEOGRAPHIC		GEOMAGNETIC		YEAR	HOURLY VALUES					2.5-MIN VALUES				
			LAT +NORTH -SOUTH	LONG +EAST -WEST	LAT +NORTH -SOUTH	LONG EAST		JFM	AMJ	JAS	OND		JFM	AMJ	JAS	OND	
			DEGREES					MONTH				MONTH					
ABINGER	(HARTLAND)	[AB]	51.1	-0.3	53.8	84.0	1926	XXX	XXX	XXX	XXX	1927	XXX	XXX	XXX	XXX	1928
							1929	XXX	XXX	XXX	XXX	1930	XXX	XXX	XXX	XXX	1931
							1932	XXX	XXX	XXX	XXX	1933	XXX	XXX	XXX	XXX	1934
							1935	XXX	XXX	XXX	XXX	1936	XXX	XXX	XXX	XXX	1937
							1938	XXX	XXX	XXX	XXX	1939	XXX	XXX	XXX	XXX	1940
							1941	XXX	XXX	XXX	XXX	1942	XXX	XXX	XXX	XXX	1943
							1944	XXX	XXX	XXX	XXX	1945	XXX	XXX	XXX	XXX	1946
							1947	XXX	XXX	XXX	XXX	1948	XXX	XXX	XXX	XXX	1949
							1950	XXX	XXX	XXX	XXX	1951	XXX	XXX	XXX	XXX	1952
							1953	XXX	XXX	XXX	XXX	1954	XXX	XXX	XXX	XXX	1955
							1956	XXX	XXX	XXX	XXX						
ABISKO		[AI]	68.3	18.8	66.0	115.1	1968	XXX	XXX	XXX	XXX	1969	XXX	XXX	XXX	XXX	1970
							1971	XXX	XXX	XXX	XXX		X				1972
ADDIS ABABA		[AA]	9.0	38.7	5.3	109.1	1958	XXX	XXX	XXX	XXX	1964	X	XXX			
AGINCOURT		[AG]	43.7	-79.2	55.0	347.0	1965	XXX	XXX	XXX	XXX	1966	XXX	XXX	XXX	XXX	1967
ALERT		[AT]	82.5	-62.5	85.8	168.1	1968	XXX	XXX	XXX	XXX	1969	XXX				1970
ALIBAG		[AL]	18.6	72.8	9.4	143.6	1958	XXX	XXX	XXX	XXX	1961	XXX	XXX	XXX	XXX	1964
ALMERIA		[AE]	36.8	-2.4	40.6	75.2	1965	XXX	XXX	XXX	XXX	1966	X				1966
AMBERLEY		[AM]	-43.1	172.7	-47.6	252.5	1959					1964	XXX	XXX	X	X	1965
ANCHORAGE		[ANC]	61.2	-149.8	60.9	258.1	1966					1965	X	XXX	XX	X	1966
ANNAMALAINAGAR		[ANN]	11.4	79.6	1.5	149.3	1957					1958	XXX	XXX	XXX	XXX	1958
APIA		[AP]	-13.8	-171.7	-16.0	260.2	1967					1961					1962
ARGENTINE ISLANDS		[AR]	-65.2	-64.2	-53.7	03.3	1957					1963	XXX	XXX	XXX	XXX	1964
							1958					1965	X	XXX	XXX	X	1966
							1959										
							1960										

CATALOGUE OF HOURLY AND 2.5 MINUTE VALUES ON MAGNETIC TAPE

MAGNETIC TAPE	NAME MASTER STATION LIST	CODE ON TAPE	GEOGRAPHIC		GEOMAGNETIC		YEAR	HOURLY VALUES				2.5-MIN VALUES				
			LAT +NORTH -SOUTH	LONG +EAST -WEST	LAT +NORTH -SOUTH	LONG EAST		JFM	AMJ	JAS	OND	JFM	AMJ	JAS	OND	
			DEGREES													
ARGENTINE ISLANDS	[AR]	-65.2	-64.2	-53.7	03.3	1961	XXX XXX XXX XXX					MONT		MONT		
						1962	XXX XXX XXX XXX					JFM	AMJ	JAS	OND	
						1963	XXX XXX XXX XXX									
						1964	XXX XXX XXX XXX									
						1965	XXX XXX XXX XXX									
						1966	XXX XXX XXX XXX									
						1967	XXX XXX XXX XXX									
						1968	XX XXX XXX XXX									
						1969	XXX XXX XXX XXX									
BAGUIO	[BG]	16.4	120.6	5.0	189.2	1965	X	X								
						1966			X							
						1967				X						
						1968					X					
						1969						X				
BAKER LAKE	[BL]	64.3	-96.0	73.7	315.2	1960	XXX XXX XXX XXX									
						1961	XXX XXX XXX XXX									
						1962	XXX XXX XXX XXX									
						1963	XXX XXX XXX XXX									
						1964	XXX XXX XXX XXX									
						1965	XXX XXX XXX XXX									
						1966	XXX XXX XXX XXX									
						1967	XXX XXX XXX XXX									
						1968	XXX XXX XXX XXX									
						1969	XXX XXX XXX XXX									
						1970	X									
BANGUI	[BA]	4.4	18.5	4.8	88.4	1961										
						1965										
						1966										
						1967										
						1968										
						1969										
						1970										
BARROW	[BW]	71.3	-156.7	68.5	241.1	1964										
						1965										
						1966										
						1967										
						1968										
						1969										
						1970										
						1971										
						1972										
						1973										
						1974										
BELSK	[BE]	51.8	20.8	50.4	104.0	1970	XXX XXX XXX XXX									
BIG DELTA	[BIG]	64.0	-145.7	64.2	259.3	1957										
BOULDER	[BD]	40.1	-105.2	48.9	316.5	1958	XXX XXX XXX XXX									
BYRD	[BY]	-80.0	-119.5	-70.5	336.3	1964										
						1967										
						1968										
						1969										
						1970										
						1971										
						1972										
						1973										
						1974										
* CAPE CHELYUSKIN	[CC]	77.7	104.2	66.2	176.4	1957										
						1958										
						1959										
						1960										
						1961										
						1962										
						1963										
						1964										
						1965										
						1966										
						1967										
						1968										
						1970										

* Computations are relative values from arbitrary baseline.

CATALOGUE OF HOURLY AND 2.5 MINUTE VALUES ON MAGNETIC TAPE

NAME			GEOGRAPHIC		GEOMAGNETIC		HOURLY VALUES			2.5-MIN VALUES		
MAGNETIC TAPE	MASTER STATION LIST	CODE ON TAPE	LAT +NORTH -SOUTH	LONG +EAST -WEST	LAT +NORTH -SOUTH	LONG EAST	YEAR					
			DEGREES						MONTH	MONTH		
CASTLE ROCK	[CR]	37.2	-122.1	43.4	298.6		1970	XXX XXX XXX	JFM	AMJ JAS	OND	JFM
							1971	XXX XXX XXX XXX	AMJ	JAS	OND	XXX XXX XXX
							1972	XXX XXX XXX XXX	JAS	OND		XXX XXX XXX XXX
							1973	XXX XXX XXX XXX	OND			XXX XXX XXX XXX
CHELTONHAM	[CH]	38.7	-76.8	50.1	350.5		1937	XXX XXX XXX XXX	JFM	AMJ JAS	OND	JFM
							1938	XXX XXX XXX XXX	AMJ	JAS	OND	XXX XXX XXX
							1939	XXX XXX XXX XXX	JAS	OND		XXX XXX XXX
							1940	XXX XXX XXX XXX				XXX XXX XXX
							1941	XXX XXX XXX XXX				XXX XXX XXX
							1942	XXX XXX XXX XXX				XXX XXX XXX
							1943	XXX XXX XXX XXX				XXX XXX XXX
							1944	XXX XXX XXX XXX				XXX XXX XXX
							1945	XXX XXX XXX XXX				XXX XXX XXX
							1946	XXX XXX XXX XXX				XXX XXX XXX
							1947	XXX XXX XXX XXX				XXX XXX XXX
							1948	XXX XXX XXX XXX				XXX XXX XXX
							1949	XXX XXX XXX XXX				XXX XXX XXX
							1950	XXX XXX XXX XXX				XXX XXX XXX
							1951	XXX XXX XXX XXX				XXX XXX XXX
							1952	XXX XXX XXX XXX				XXX XXX XXX
							1953	XXX XXX XXX XXX				XXX XXX XXX
							1954	XXX XXX XXX XXX				XXX XXX XXX
							1955	XXX XXX XXX XXX				XXX XXX XXX
							1956	XXX XXX XXX XXX				XXX XXX XXX
COLLEGE	[CO]	64.8	-147.8	64.6	256.5		1948	XXX XXX XXX XXX				
							1949	XXX XXX XXX XXX				
							1950	XXX XXX XXX XXX				
							1951	XXX XXX XXX XXX				
							1952	XXX XXX XXX XXX				
							1953	XXX XXX XXX XXX				
							1954	XXX XXX XXX XXX				
							1955	XXX XXX XXX XXX				
							1956	XXX XXX XXX XXX				
							1957	XXX XXX XXX XXX				
							1958	XXX XXX XXX XXX				
							1959	XXX XXX XXX XXX				
							1960	XXX XXX XXX XXX				
							1961	XXX XXX XXX XXX				
							1962	XXX XXX XXX XXX				
							1963	XXX XXX XXX XXX				XXX XXX XXX
							1964	XXX XXX XXX XXX				XXX XXX XXX
							1965	XXX XXX XXX XXX				XXX XXX XXX
							1966	XXX XXX XXX XXX				XXX XXX XXX
							1967	XXX XXX XXX XXX				XXX XXX XXX
							1968	XXX XXX XXX XXX				XXX XXX XXX
							1969	XXX XXX XXX XXX				XXX XXX XXX
							1970	XXX XXX XXX XXX				XXX XXX XXX
							1971	XXX XXX XXX XXX				
							1972	XXX XXX XXX XX				X
							1973	XXX XXX XXX XXX				
							1974	XXX X				
DALLAS	[DS]	32.9	-96.7	42.9	327.8		1964	XXX XXX XXX XXX				X
							1965	XXX XXX XXX XXX				
							1966	XXX				
							1967	XXX XXX XXX XXX				
							1968	XXX XXX XXX XXX				
							1969	XXX XXX XXX XXX				
							1970	XXX XXX XXX XXX				
							1971	XXX XXX XXX XXX				
							1972	XXX XXX XXX XXX				
							1973	XXX XXX XXX XXX				
							1974	XXX X				
* DIKSON	(DIXON)	[DI]	73.5	80.5	63.0	161.5	1964	X XXX				
							1965	XXX XXX XXX XXX				
							1966	XXX XXX XXX XXX				
							1967	XXX XXX XXX XXX				
							1968	XXX XXX XXX XXX				
							1969	XXX XXX XXX XXX				
							1970*	XXX XXX XXX XXX				
							1971*	X				
							1972	XX				
DOMBAS	[DO]	62.0	9.1	62.2	100.1		1969	X XXX				
DRUZHNAIA	(HEISS IS)	[DR]	80.6	58.0	71.3	156.0	1965					
							1966	XXX X X XXX				
							1967	XXX X X XXX				
DUMONT D'URVILLE	(TERRE ADELIE)	[DU]	66.6	140.0	-75.6	230.8	1964					
							1965	XXX XXX XXX XXX				

* Computations are relative values from arbitrary baseline.

CATALOGUE OF HOURLY AND 2.5 MINUTE VALUES ON MAGNETIC TAPE

MAGNETIC TAPE	NAME MASTER STATION LIST	CODE ON TAPE	GEOGRAPHIC		GEOMAGNETIC		YEAR	HOURLY VALUES			2.5-MIN VALUES				
			LAT +NORTH -SOUTH	LONG +EAST -WEST	LAT +NORTH -SOUTH	LONG EAST		JFM	AMJ	JAS	OND	JFM	AMJ	JAS	
			DEGREES									MONTH			
DUSHETI	(TBILISI)	[DT]	42.0	44.7	36.6	122.0	1967		X X X			JFM	AMJ	JAS	OND
EBRO	(TORTOSA)	[EB]	40.8	0.4	43.9	79.6	1966	XXX	XXX	XXX	X	XX	XXX	XXX	
EIGHTS		[EG]	-75.2	-77.1	-63.8	355.3	1964			X	XXX			X XXX	
FANNING		[FAN]	3.9	-159.3	3.7	268.8	1957			XX	XXX			XXX XXX XXX	
FORT CHURCHILL	(CHURCHILL)	[FC]	58.8	-94.1	68.7	322.8	1964			X	XXX			X XXX	
							1965	XXX	XXX	XXX	XXX	XXX	XXX	XXX XXX XXX	
							1966	XXX	XXX	XXX	XXX	XXX	XXX	XXX XXX XXX	
							1967	XXX	XXX	XXX	XXX	XXX	XXX	XXX XXX XXX	
							1968	XXX	XXX	XXX	XXX	XXX	XXX	XXX XXX XXX	
							1969	XXX	XXX	XXX	XXX	XXX	XXX	XXX XXX XXX	
							1970	XXX	XXX	XXX	XXX	XXX	XXX	XXX XXX XXX	
							1971			X				X	
							1972	XX						XX	
FREDERICKSBURG		[FR]	38.2	-77.3	49.5	349.9	1956	XXX	XXX	XXX	XXX				
							1957	XXX	XXX	XXX	XXX				
							1958	XXX	XXX	XXX	XXX				
							1959	XXX	XXX	XXX	XXX				
							1960	XXX	XXX	XXX	XXX				
							1961	XXX	XXX	XXX	XXX				
							1962	XXX	XXX	XXX	XXX			XX XXX	
							1963	XXX	XXX	XXX	XXX			XX	
							1964	XXX	XXX	XXX	XXX			XXX XXX XXX XXX	
							1965	XXX	XXX	XXX	XXX			XXX XXX XXX XXX	
							1966	XXX	XXX	XXX	XXX			XXX XXX XXX XXX	
							1967	XXX	XXX	XXX	XXX			XXX XXX XXX XXX	
							1968	XXX	XXX	XXX	XXX			XXX XXX XXX XXX	
							1969	XXX	XXX	XXX	XXX			XXX XXX XXX XXX	
							1970	XXX	XXX	XXX	XXX			X	
							1971	XXX	XXX	XXX	XXX			XX	
							1972	XXX	XXX	XXX	XXX			XX XX	
							1973	XXX	XXX	XXX	XXX				
							1974	XXX	X						
FUQUENE		[FQ]	5.4	-73.7	16.9	355.1	1961			XX	XXX			XX XXX	
							1964	XXX	XXX	XXX	XXX			XXX XXX XXX XXX	
							1965	XXX	XXX	XXX	XXX			XXX XXX XXX XXX	
							1966	XXX	XXX					XXX XXX	
							1967			XX	X X			XX X X	
							1968	XX	XXX					XX XXX	
							1969			XXX	X			XXX X	
FURSTENFELDBRUCK		[FU]	48.1	11.2	48.8	93.3	1964			X	XXX			XX XXX	
							1965	XXX	XXX	XXX	XXX			XXX XXX XXX XXX	
							1966	XXX	XXX	XXX	XXX			XXX XXX XXX XXX	
							1967	XXX	XXX	X	X			XXX XXX X X	
							1968	XXX	X					X XXX	
							1969			X				X XXX	
							1970	X						X	
GNANGARA		[GN]	-31.7	115.9	-43.2	185.7	1959			X	XXX				
							1961			XX	XXX			XX XXX	
							1964	XXX	XXX	XXX	XXX			XXX XXX XXX XXX	
							1965	XXX	XXX	XXX	XXX			XXX XXX XXX XXX	
							1966	XXX	XXX	XXX	XXX			XXX XXX XXX XXX	
							1967	XXX	XXX	XXX	XXX			XXX XXX XXX XXX	
							1968	XXX	XXX	XXX	XXX			XXX XXX XXX XXX	
							1969	XXX						XXX XXX XXX XXX	
							1970	XXX						XXX	
GODHAVN		[GO]	69.2	-53.5	79.8	32.5	1964			X	XXX				
							1965	XXX	XXX	XXX	XXX			XX XXX XXX XXX	
							1966			X				X	
							1967				X X X			X X X	
							1968	XX	XXX					XX XXX X X	
							1969			XXX	X X			X XXX X	
							1970	X						X	
GORNOTAYEZHNAYA	(USSURISK)	[GR]	43.6	132.1	32.8	198.1	1970				X			X	
GREAT WHALE RIVER		[GWR]	55.2	-77.7	66.5	347.4	1965								
							1966	XXX	XXX	XXX	XXX			XXX XXX XXX XXX	
							1967	XXX	XXX	XXX	XXX			XXX XXX XXX XXX	
							1968	XXX	XXX	XXX	XXX			XXX XXX XXX XXX	
							1969	XXX	XXX	XXX	XXX			XXX XXX XXX XXX	
							1970	XXX	XXX	XXX	XXX			XXX XXX XXX XXX	

CATALOGUE OF HOURLY AND 2.5 MINUTE VALUES ON MAGNETIC TAPE

MAGNETIC TAPE	NAME		GEOGRAPHIC			GEOMAGNETIC			HOURLY VALUES		2.5-MIN VALUES	
	MASTER	CODE	LAT	LONG	LAT	LONG	YEAR					
	STATION	ON	+NORTH	+EAST	+NORTH	EAST						
LIST	TAPE		-SOUTH	-WEST	-SOUTH							
DEGREES												
GREAT WHALE RIVER	[GWR]	55.2	-77.7	66.5	347.4	1972						
GUAM	[GU]	13.5	144.8	3.9	212.8	1957						
						1958	XXX XXX XXX XXX	XXX XXX XXX XXX				
						1959	XXX XXX XXX XXX	XXX XXX XXX XXX				
						1960	XXX XXX XXX XXX	XXX XXX XXX XXX				
						1961	XXX XXX XXX XXX	XXX XXX XXX XXX				
						1962	XXX XXX XXX XXX	XXX XXX XXX XXX				
						1963	XXX XXX XX	XXX XXX XX				
						1964	XXX XXX XXX XXX	XXX XXX XXX XXX				
						1965	XXX XXX XXX XXX	XXX XXX XXX XXX				
						1966	XXX XXX XXX XXX	XXX XXX XXX XXX				
						1967	XXX XXX XXX XXX	XXX XXX XXX XXX				
						1968	XXX X XXX XXX	XXX X XXX XXX				
						1969	XXX XXX XXX XXX	XXX XXX XXX XXX				
						1970	XXX XXX XXX XXX	XXX XXX XXX XXX				
						1971	XXX XXX XXX XXX	XXX XXX XXX XXX				
						1972	XXX XXX XXX XX	XXX XXX XXX XX				
						1973	XXX XXX XXX XXX	XXX XXX XXX XXX				
						1974	XXX X					
HALLEY BAY	[HY]	-75.5	-26.6	-65.7	24.2	1957						
HARTLAND	[HA]	50.9	-4.4	54.6	79.0	1957						
HAVANA	(CUBA)	[HAV]	22.9	-82.1	34.1	345.4	1967	XXX XXX XXX XXX	X X X			
HERMANUS	[HR]	-34.4	19.2	-33.2	80.5	1956	XXX XXX XXX XXX					
						1957	XXX XXX XXX XXX					
						1958	XXX XXX XXX XXX					
						1959	XXX XXX XXX XXX					
						1960	XXX XXX XXX XXX					
						1961	XXX XXX XXX XXX					
						1962	XXX XXX XXX XXX					
						1963	XXX XXX XXX XXX					
						1964	XXX XXX XXX XXX					
						1965	XXX XXX XXX XXX					
						1966	XXX XXX XXX XXX					
						1967	XXX XX X X					
						1968	XXX XXX XXX XXX					
						1969	XXX XXX XXX XXX					
						1970	XXX XXX XXX XXX					
						1971	XXX XXX XXX XXX					
						1972	XXX XXX XXX XXX					
HONOLULU	[HO]	21.3	-158.0	21.0	266.4	1939						
						1940	XXX XXX XXX XXX					
						1941	XXX XXX XXX XXX					
						1942	XXX XXX XXX XXX					
						1943	XXX XXX XXX XXX					
						1944	XXX XXX XXX XXX					
						1945	XXX XXX XXX XXX					
						1946	XXX XXX XXX XXX					
						1947	XXX XXX XXX XXX					
						1948	XXX XXX XXX XXX					
						1949	XXX XXX XXX XXX					
						1950	XXX XXX XXX XXX					
						1951	XXX XXX XXX XXX					
						1952	XXX XXX XXX XXX					
						1953	XXX XXX XXX XXX					
						1954	XXX XXX XXX XXX					
						1955	XXX XXX XXX XXX					

CATALOGUE OF HOURLY AND 2.5 MINUTE VALUES ON MAGNETIC TAPE

MAGNETIC TAPE	NAME MASTER STATION LIST	CODE ON TAPE	GEOGRAPHIC			GEOMAGNETIC			HOURLY VALUES	2.5-MIN VALUES			
			LAT +NORTH -SOUTH	LONG +EAST -WEST	LAT +NORTH -SOUTH	LONG EAST	YEAR						
			DEGREES	MONTH	JFM	AMJ	JAS	OND	MONTH	JFM	AMJ	JAS	OND
HONOLULU	[HO]	21.3	-158.0	21.0	266.4	1956	XXX XXX XXX XXX						
				1957	XXX XXX XXX XXX								
				1958	XXX XXX XXX XXX								
				1959	XXX XXX XXX XXX								
				1960	XXX XXX XXX XXX								
				1961	XXX XXX XXX XXX								
				1962	XXX XXX XXX XXX								XX XXX
				1963	XXX XXX XXX XXX								
				1964	XXX XXX XXX XXX								
				1965	XXX XXX XXX XXX								
				1966	XXX XXX XXX XXX								
				1967	XXX XXX XXX XXX								
				1968	XXX XXX XXX XXX								
				1969	XXX XXX XXX XXX								
				1970	XXX XXX XXX XXX								
				1971	XXX XXX XXX XXX								
				1972	XXX XXX XXX XXX								
				1973	XXX XXX XXX XXX								
				1974	XXX X								
HUANCAYO	[HU]	-12.0	-75.3	-0.6	353.8	1957		X					
				1958	XXX XXX XXX XXX								
				1964	XXX XXX XXX XXX								
				1965	XXX XXX XXX XXX								
				1966	XXX XXX XXX XXX								
				1967	XX XXX								XX X
				1968	XXX XXX XXX X								
HYDERABAD	[HYD]	17.4	78.5	7.6	148.9	1966							
				1967	XXX XXX XXX XXX								
				1968	XXX XXX XXX XXX								
IBADAN	[IB]	7.4	3.9	10.6	74.6	1965							
ISLA DE PASCUA	(EASTER ISLAND)	[IP]	-27.1	-109.4	-18.2	322.7	1964	X					
JARVIS	[JRV]	-0.3	-160.0	-0.6	268.9	1958	XXX XXX XXX XXX						
KAKIOKA	[KA]	36.2	140.1	26.0	205.9	1957	XXX XXX XXX XXX						
				1958	XXX XXX XXX XXX								
				1959	XXX XXX XXX XXX								
				1960	XXX XXX XXX XXX								
				1961	XXX XXX XXX XXX								
				1962	XXX XXX XXX XXX								
				1963	XXX XXX XXX XXX								
				1964	XXX XXX XXX XXX								
				1965	XXX XXX XXX XXX								
				1966	XXX XXX XXX XXX								
				1967	XXX XXX XXX XXX								
				1968	XXX XXX XXX XXX								
				1969	XXX XXX XXX XXX								
				1970	XXX XXX XXX XXX								
				1971	XXX XXX XXX XXX								
				1973	XXX XXX XXX XXX								
KANOYA	[KY]	31.4	130.8	20.5	198.0	1966	X						
KIRUNA	[KI]	67.8	20.4	65.2	115.5	1962							
				1963	XXX XXX XX								
				1964	X XXX								
				1965	XXX XXX XXX XXX								
				1966	XXX XXX XXX XXX								
				1967	X X								
				1970	X X								
KOROR	[KR]	7.3	134.5	-3.2	203.5	1957							
				1958	XXX XXX XXX XXX								
				1965	XXX XXX XXX XXX								
				1966	XXX								
LAQUIACA	[QA]	-22.1	-65.6	-10.6	03.2	1966	X						
LEIRVOGUR	[LR]	64.1	-21.7	70.2	71.0	1962							
				1963	XXX XXX XX								
				1964	X XXX								
				1965	XXX XXX XXX XXX								
				1966	XXX XXX XXX XXX								
				1967	XXX XXX XXX XXX								
				1968	XXX XXX XXX XXX								
				1969	XXX XXX XXX XXX								
				1970	XXX XXX XXX XXX								
				1972	XXX XXX XXX XXX								

CATALOGUE OF HOURLY AND 2.5 MINUTE VALUES ON MAGNETIC TAPE

MAGNETIC TAPE	NAME MASTER STATION LIST	CODE ON TAPE	GEOGRAPHIC				GEOMAGNETIC			HOURLY VALUES	2.5-MIN VALUES	
			LAT	LONG	LAT	LONG	YEAR					
			+NORTH -SOUTH	+EAST -WEST	+NORTH -SOUTH	EAST						
DEGREES												
LERWICK	[LE]	60.1	-1.1	62.5	88.5	1964				MONTH JFM AMJ JAS OND	MONTH JFM AMJ JAS OND	
						1965	X XXX			XXX XXX XXX XXX	XXX XXX XXX XXX	
						1966	X			X		
						1970	XXX			XXX		
LOGRONO	[LG]	42.4	-2.5	46.0	77.1	1966				X	X	
LOVO	[LO]	59.3	17.8	58.0	105.7	1940				XXX XXX XXX XXX		
						1941	XXX XXX XXX XXX					
						1942	XXX XXX XXX XXX					
						1943	XXX XXX XXX XXX					
						1944	XXX XXX XXX XXX					
						1945	XXX XXX XXX XXX					
						1946	XXX XXX XXX XXX					
						1964		X XXX			X XXX	
						1965						
						1966	XXX XXX XXX XXX			X		
						1967	XXX XXX XXX XXX					
						1968	XXX XXX XXX XXX					
						1969	XXX XXX XXX XXX					
						1970	XXX XXX XXX XXX					
LUANDA BELAS	(LUANDA)	[LU]	-8.9	13.1	-7.1	80.5	1967			X X		X X
						1969	X				X	
M#BOUR	[MB]	14.3	-16.9	21.2	55.0	1957				XXX XXX XXX XXX		
						1958	XXX XXX XXX XXX					
						1961	XXX XXX XXX XXX					
						1965						
						1966	XXX XXX XXX XXX					
						1967	XXX XXX XXX XXX					
						1968	XXX XXX XXX XXX					
						1970	X					
MACQUARIE ISLAND	[MI]	-54.5	158.9	-61.0	243.0	1962				XXX XXX XXX XXX		
						1963	XXX XXX XX			XXX XXX XX		
						1964	X XXX			X XXX		
						1965	XXX XXX XXX XXX			XXX XXX XXX XXX		
						1966	XXX XXX XXX XXX			XXX XXX XXX XXX		
						1967	XXX XXX XXX XXX			XXX XXX XXX XXX		
						1968	XXX XXX XXX XXX			XXX XXX XXX XXX		
NAWSON	[MW]	-67.6	62.8	-73.0	102.8	1964				X XXX		X XXX
						1965	X XXX			XXX X		X XXX
						1966	X			X		X XXX
MEANOOK	[ME]	54.6	-113.3	61.8	301.1	1964				X XXX		X XXX
						1965	XXX XXX XXX XXX			XXX XXX XXX XXX		
						1966	XXX XXX XXX XXX			XXX XXX XXX XXX		
						1967	XXX XXX XXX XXX			XXX XXX XXX XXX		
						1968	XXX XXX XXX XXX			XXX XXX XXX XXX		
						1969	XXX XXX XXX XXX			X XXX		
						1970	XXX			XXX		
MEMAMBEITU	[MT]	43.9	144.1	34.0	208.4	1964				X XXX		X XXX
						1965	XXX XXX XXX XXX			XXX XXX XXX XXX		
						1966	XXX XXX XXX XXX			XXX XXX XXX XXX		
MIRNY	[MY]	-66.5	93.0	-77.0	146.8	1964				X XXX		X XXX
						1966	X			X		X XXX
						1967	X X			X		X X
MISALLAT	[ML]	29.5	30.8	26.9	105.9	1964				XXX XXX XXX XXX		X XXX
						1965	XXX XXX XXX XXX			XXX XXX XXX XXX		
MOCA	[MC]	3.3	8.6	5.7	78.5	1964				XXX XXX XXX XXX		XXX XXX XXX XXX
						1965	XXX XXX XXX XXX			XXX XXX XXX XXX		
						1966	XXX XXX XXX XXX			XXX XXX XXX XXX		
						1967		X X X		X X X		X X X
						1968	XX XXX			XX XXX		XXX X
						1969		XXX X				
MOULD BAY	[MLB]	76.2	-119.4	79.0	256.3	1962				XXX XXX XX XXX		
						1963	XXX XXX XXX XXX					
						1964	X XXX					
						1965	XXX XXX XXX XXX					
						1966	XXX XXX XXX XXX					
						1967						
						1968						
						1969						
MUNTINLUPA	[MU]	14.3	121.0	3.0	189.7	1963				XXX XXX XXX XXX		X XXX X
						1964	XXX XXX XXX XXX					
						1965	XXX XXX XXX XXX					

CATALOGUE OF HOURLY AND 2.5 MINUTE VALUES ON MAGNETIC TAPE

MAGNETIC TAPE	NAME MASTER STATION LIST	CODE ON TAPE	GEOGRAPHIC			GEOMAGNETIC			HOURLY VALUES			2.5-MIN VALUES						
			LAT +NORTH -SOUTH	LONG +EAST -WEST	LAT +NORTH -SOUTH	LONG EAST	YEAR											
			DEGREES						MONTH	JFM	AMJ	JAS	OND	MONTH	JFM	AMJ	JAS	OND
MUNTINLUPA	[MU]	14.3	121.0	3.0	189.7	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978
MURMANSK	[MM]	68.2	33.0	63.5	125.8	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976
NAIROBI	[NR]	-1.3	36.8	-4.4	105.2	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976
NARSSARSSUAQ	[NAS]	61.1	-45.2	71.0	37.0	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
NEWPORT	[NT]	48.2	-117.1	55.0	300.1	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978
NOVOLAZARREVSKAYA	[NL]	-70.7	11.8	-66.1	53.5	1967												
NURMIJARVI	[NU]	60.5	24.6	57.8	112.5	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965
OTTAWA	[OTT]	45.4	-75.5	57.0	351.5	1968	1969	1970										
PARAMARIBO	[PA]	5.8	-55.2	16.9	14.3	1964	1965	1966	1967	1968	1969	1970						
PATRONY	(IRKUTSK)	[PY]	52.1	104.4	40.7	174.7	1964	1965	1966	1967	1968	1969						
PILAR		[PI]	-31.6	-63.8	-20.2	04.6	1957	1958	1961	1964	1965	1966	1967	1968				
PLATEAU		[PLT]	-79.5	40.0	-77.2	51.3	1966	1967	1968									

CATALOGUE OF HOURLY AND 2.5 MINUTE VALUES ON MAGNETIC TAPE

MAGNETIC TAPE	NAME MASTER STATION LIST	CODE ON TAPE	GEOGRAPHIC				GEOMAGNETIC			HOURLY VALUES				2.5-MIN VALUES				
			LAT	LONG	LAT	LONG	YEAR											
			+NORTH -SOUTH	+EAST -WEST	+NORTH -SOUTH	EAST												
DEGREES																		
PORT AUX FRANCAIS (KERGUELEN) [KG] -49.3 70.2 -57.3 127.9 1961 XXX XXX XXX XXX 1962 XXX XXX XXX XXX 1963 XXX XXX XXX XXX 1964 XXX XXX XXX XXX 1965 XXX XXX XXX XXX 1966 XXX X X XX XXX X X XX PORT MORESBY [PM] -9.4 147.1 -18.5 217.8 1961 XX XXX X XXX XX XXX 1964 X X XXX X X XXX X XXX 1965 XXX XXX XXX XXX XXX XXX XXX XXX 1966 XXX XXX XXX XXX XXX XXX XXX XXX 1967 XXX X X X XXX X X X X 1968 XX XXX XX XXX XXX X 1969 XXX X XXX X XXX X 1970 XXX XXX XXX XXX RESOLUTE BAY [RB] 74.7 -94.9 82.9 289.3 1960 XXX XXX XXX XXX 1961 XXX XXX XXX XXX 1962 XXX XXX XXX XXX 1963 XXX XXX XXX XXX 1964 X XXX X XXX X XXX X XXX 1965 XXX XXX XXX XXX XXX XXX XXX XXX 1966 XXX XXX XXX XXX XXX XXX XX 1967 XXX XXX XXX XXX XXX XXX XX XXX 1968 XXX XXX XXX XXX XXX XXX XXX XXX 1969 XXX XXX XXX XXX XXX XXX X XXX X 1970 XXX XXX XXX XXX ROI BAUDOUIN (BAUDOUIN) [RBD] -70.4 24.3 -67.9 63.1 1966 X X RUDE SKOV (COPENHAGEN) [RS] 55.8 12.4 55.8 98.5 1964 X X 1966 XXX X X XXX X 1968 X X XXX X 1970 X X XXX X SAN FERNANDO [SF] 36.4 -6.2 40.9 71.3 1966 X X SAN JUAN (PUERTO RICO) [SJ] 18.1 -66.1 29.6 03.1 1926 XXX XXX XXX XXX 1927 XXX XXX X 1928 XX XXX XXX XXX 1929 XXX XXX XXX XXX 1930 XXX XXX XXX XXX 1931 XXX XXX XXX XXX 1932 XXX XXX XXX XXX 1933 XXX XXX XXX XXX 1934 XXX XXX XXX XXX 1935 XXX XXX XXX XXX 1936 XXX XXX XXX XXX 1937 XXX XXX XXX XXX 1938 XXX XXX XXX XXX 1939 XXX XXX XXX XXX 1940 XXX XXX XXX XXX 1941 XXX XXX XXX XXX 1942 XXX XXX XXX XXX 1943 XXX XXX XXX XXX 1944 XXX XXX XXX XXX 1945 XXX XXX XXX XXX 1946 XXX XXX XXX XXX 1947 XXX XXX XXX XXX 1948 XXX XXX XXX XXX 1949 XXX XXX XXX XXX 1950 XXX XXX XXX XXX 1951 XXX XXX XXX XXX 1952 XXX XXX XXX XXX 1953 XXX XXX XXX XXX 1954 XXX XXX XXX XXX 1955 XXX XXX XXX XXX 1956 XXX XXX XXX XXX 1957 XXX XXX XXX XXX 1958 XXX XXX XXX XXX 1959 XXX XXX XXX XXX 1960 XXX XXX XXX XXX 1961 XXX XXX XXX XXX XX XXX 1962 XXX XXX XXX XXX XXX 1963 XXX XXX XXX XXX XXX XXX XXX 1964 XXX XXX XXX XXX XXX XXX XXX 1965 XXX XXX XXX XXX XXX XXX XXX 1966 XXX XXX XXX XXX XXX XXX XXX 1967 XXX XXX XXX XXX XXX XXX XXX XXX 1968 XXX XXX XXX XXX XXX XXX XXX XXX 1969 XXX XXX XXX XXX XXX XXX XXX XXX 1970 XXX XXX XXX XXX XXX XXX X 1971 XXX XXX XXX XXX XXX 1972 XXX XXX XXX XXX																		

CATALOGUE OF HOURLY AND 2.5 MINUTE VALUES ON MAGNETIC TAPE

MAGNETIC TAPE	NAME MASTER STATION LIST	CODE ON TAPE	GEOGRAPHIC			GEOMAGNETIC			HOURLY VALUES	2.5-MIN VALUES
			LAT +NORTH -SOUTH	LONG +EAST -WEST	LAT +NORTH -SOUTH	LONG EAST	YEAR			
DEGREES										
SAN JUAN	(PUERTO RICO)	[SJ]	18.1	-66.1	29.6	03.1	1973	XXX XXX XXX XXX		
							1974	XXX X		
SAN MIGUEL		[SM]	37.7	-25.6	45.6	50.8	1965		XX	XX
SITKA		[SI]	57.0	-135.3	59.9	275.4	1902	X XXX XXX XXX		
							1903	XXX XXX XXX XXX		
							1904	XXX XXX XXX XXX		
							1905	XXX XXX XXX XXX		
							1906	XXX XXX XXX XXX		
							1907	XXX XXX XXX XXX		
							1908	XXX XXX XXX XXX		
							1909	XXX XXX XXX XXX		
							1910	XXX XXX XXX XXX		
							1911	XXX XXX XXX XXX		
							1912	XXX XXX XXX XXX		
							1913	XXX XXX XXX XXX		
							1914	XXX XXX XXX XXX		
							1915	XXX XXX XXX XXX		
							1916	XXX XXX XXX XXX		
							1917	XXX XXX XXX XXX		
							1918	XXX XXX XXX XXX		
							1919	XXX XXX XXX XXX		
							1920	XXX XXX XXX XXX		
							1921	XXX XXX XXX XXX		
							1922	XXX XXX XXX XXX		
							1923	XXX XXX XXX XXX		
							1924	XXX XXX XXX XXX		
							1925	XXX XXX XXX XXX		
							1926	XXX XXX XXX XXX		
							1927	XXX XXX XXX XXX		
							1928	XXX XXX XXX XXX		
							1929	XXX XXX XXX XXX		
							1930	XXX XXX XXX XXX		
							1931	XXX XXX XXX XXX		
							1932	XXX XXX XXX XXX		
							1933	XXX XXX XXX XXX		
							1934	XXX XXX XXX XXX		
							1935	XXX XXX XXX XXX		
							1936	XXX XXX XXX XXX		
							1937	XXX XXX XXX XXX		
							1938	XXX XXX XXX XXX		
							1939	XXX XXX XXX XXX		
							1940	XXX XXX XXX XXX		
							1941	XXX XXX XXX XXX		
							1942	XXX XXX XXX XXX		
							1943	XXX XXX XXX XXX		
							1944	XXX XXX XXX XXX		
							1945	XXX XXX XXX XXX		
							1946	XXX XXX XXX XXX		
							1947	XXX XXX XXX XXX		
							1948	XXX XXX XXX XXX		
							1949	XXX XXX XXX XXX		
							1950	XXX XXX XXX XXX		
							1951	XXX XXX XXX XXX		
							1952	XXX XXX XXX XXX		
							1953	XXX XXX XXX XXX		
							1954	XXX XXX XXX XXX		
							1955	XXX XXX XXX XXX		
							1956	XXX XXX XXX XXX		
							1957	XXX XXX XXX XXX		
							1958	XXX XXX XXX XXX		
							1959	XXX XXX XXX XXX		
							1960	XXX XXX XXX XXX		
							1961	XXX XXX XXX XXX		
							1962	XXX XXX XXX XXX		
							1963	XXX XXX XXX XXX		
							1964	XXX XXX XXX XXX	XXX XX X XXX	
							1965	XXX XXX XXX XXX	XXX XXX XXX XXX	
							1966	XXX XXX XXX XXX	XXX XXX XXX XXX	
							1967	XXX XXX XXX XXX	XXX XXX XXX XXX	
							1968	XXX XXX XXX XXX	XXX XXX XXX XXX	
							1969	XXX XXX XXX XXX	XXX XXX XXX XXX	
							1970	XXX XXX XXX XXX	XX	
							1971	XXX XXX XXX XXX		
							1972	XXX XXX XXX XX		
							1973	XXX XXX XXX XXX		
							1974	XXX X		X
SODANKYLA		[SO]	67.3	26.6	63.7	119.9	1914	XXX XXX XXX XXX		
							1915	XXX XXX XXX XXX		
							1916	XXX XXX XXX XXX		
							1917	XXX XXX XXX XXX		
							1918	XX X XXX XXX		

CATALOGUE OF HOURLY AND 2.5 MINUTE VALUES ON MAGNETIC TAPE

MAGNETIC TAPE	NAME MASTER STATION LIST	CODE ON TAPE	GEOGRAPHIC			GEOMAGNETIC			HOURLY VALUES				2.5-MIN VALUES				
			LAT +NORTH -SOUTH	LONG +EAST -WEST	LAT +NORTH -SOUTH	LONG EAST	YEAR	JFM	AMJ	JAS	OND	JFM	AMJ	JAS	OND		
			DEGREES														
TAHITI	[TAH]	-17.5	-149.6	-15.3	282.8	1968	XXX X					XXX X					
						1969	X XXX					X XXX					
						1970	XXX					XXX					
TANANARIVE	[TN]	-18.9	47.5	-23.7	112.4	1965											
						1966											
						1967											
						1968											
						1969											
						1970											
TANGERANG	[TG]	-6.1	106.6	-17.6	175.4	1966											
						1967											
						1969											
TATUOCA	[TT]	-1.2	-48.5	9.5	20.7	1964											
						1965											
TBILISI	[TB]	41.7	44.8	36.3	122.0	1964	X										
TEHRAN	[TEH]	35.7	51.3	29.3	126.5	1966											
						1967											
TENERIFE	[TEN]	28.4	-16.2	34.9	58.6	1964											
						1965											
						1966											
THULE II	[TH]	77.4	-69.1	88.9	358.0	1964											
						1965											
						1966											
						1967											
						1968											
TIKHAYA BAY	(HEISS IS)	[BT]	80.3	52.8	71.5	153.2	1957										
						1958											
*TIKSI BAY	(TIXIE BAY)	[TI]	71.5	129.0	60.4	191.4	1964										
						1965											
						1966											
						1967											
						1968											
						1969*											
						1970*											
TOLEDO	[TL]	39.8	-4.0	43.8	74.6	1964	X					X					
						1965											
						1966											
						1967											
						1968											
						1969											
TOOLANGI	[TO]	-37.5	145.4	-46.6	220.8	1924											
						1925											
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						1961											
						1964											
						1965											
						1966											
						1967											
						1968											
						1969											
						1970											
TRELEW	[TW]	-43.2	-65.3	-31.7	03.1	1964	X					X					
						1965											
						1966											
						1967											

* Computations are relative values from arbitrary baseline.

CATALOGUE OF HOURLY AND 2.5 MINUTE VALUES ON MAGNETIC TAPE

MAGNETIC TAPE	NAME MASTER STATION LIST	CODE ON TAPE	GEOGRAPHIC		GEOMAGNETIC		HOURLY VALUES	2.5-MIN VALUES
			LAT +NORTH -SOUTH	LONG +EAST -WEST	LAT +NORTH -SOUTH	LONG EAST		
			DEGREES					
TRELEW	[TW]	-43.2	-65.3	-31.7	03.1	1968	XXX	XXX
TROMSO	[TR]	69.6	19.0	67.1	116.8	1968	XXX X	XXX X
TSUME8	[TS]	-19.2	17.7	-18.1	82.8	1964	XX XXX	XXX XXX
TUCSON	[TU]	32.2	-110.8	40.4	312.2	1909	XX	
						1910	XXX XXX XXX XXX	
						1911	XXX XXX XXX XXX	
						1912	XXX XXX XXX XXX	
						1913	XXX XXX XXX XXX	
						1914	XXX XXX XXX XXX	
						1915	XXX XXX XXX XXX	
						1916	XXX XXX XXX XXX	
						1917	XXX XXX XXX XXX	
						1918	XXX XXX XXX XXX	
						1919	XXX XXX XXX XXX	
						1920	XXX XXX XXX XXX	
						1921	XXX XXX XXX XXX	
						1922	XXX XXX XXX XXX	
						1923	XXX XXX XXX XXX	
						1924	XXX XXX XXX XXX	
						1925	XXX XXX XXX XXX	
						1926	XXX XXX XXX XXX	
						1927	XXX XXX XXX XXX	
						1928	XXX XXX XXX XXX	
						1929	XXX XXX XXX XXX	
						1930	XXX XXX XXX XXX	
						1931	XXX XXX XXX XXX	
						1932	XXX XXX XXX XXX	
						1933	XXX XXX XXX XXX	
						1934	XXX XXX XXX XXX	
						1935	XXX XXX XXX XXX	
						1936	XXX XXX XXX XXX	
						1937	XXX XXX XXX XXX	
						1938	XXX XXX XXX XXX	
						1939	XXX XXX XXX XXX	
						1940	XXX XXX XXX XXX	
						1941	XXX XXX XXX XXX	
						1942	XXX XXX XXX XXX	
						1943	XXX XXX XXX XXX	
						1944	XXX XXX XXX XXX	
						1945	XXX XXX XXX XXX	
						1946	XXX XXX XXX XXX	
						1947	XXX XXX XXX XXX	
						1948	XXX XXX XXX XXX	
						1949	XXX XXX XXX XXX	
						1950	XXX XXX XXX XXX	
						1951	XXX XXX XXX XXX	
						1952	XXX XXX XXX XXX	
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						1954	XXX XXX XXX XXX	
						1955	XXX XXX XXX XXX	
						1956	XXX XXX XXX XXX	
						1957	XXX XXX XXX XXX	
						1958	XXX XXX XXX XXX	
						1959	XXX XXX XXX XXX	
						1960	XXX XXX XXX XXX	
						1961	XXX XXX XXX XXX	XX XXX
						1962	XXX XXX XXX XXX	
						1963	XXX XXX XXX XXX	
						1964	XXX XXX XXX XXX	XXX XXX XXX XXX
						1965	XXX XXX XXX XXX	XXX XXX XXX XXX
						1966	XXX XXX XXX XXX	XXX XXX XXX XXX
						1967	XXX XXX XXX XXX	XXX XXX XXX XXX
						1968	XXX XXX XXX XXX	XXX XXX XXX XXX
						1969	XXX XXX XXX XXX	XXX XXX XXX XXX
						1970	XXX XXX XXX XXX	XX
						1971	XXX XXX XXX XXX	
						1972	XXX XXX XXX XXX	
						1973	XXX XXX XXX XXX	
						1974	XXX X	
* UELEN	(CAPE WELLEN)	[UE]	66.1	-169.8	61.7	237.0	1964	X XXX
							1965	XXX XXX XXX XXX
							1966	XXX XXX XXX XXX
							1967	XXX XXX XXX XXX
							1968	XXX XXX XXX XXX
							1969 *	XXX XXX XXX XXX
							1970 *	XXX XXX XXX XXX
VASSOURAS		[VA]	-22.4	-43.6	-11.9	23.8	1959	X XXX

* Computations are relative values from arbitrary baseline.

CATALOGUE OF HOURLY AND 2.5 MINUTE VALUES ON MAGNETIC TAPE

MAGNETIC TAPE	NAME MASTER STATION LIST	CODE ON TAPE	GEOGRAPHIC			GEOMAGNETIC			HOURLY VALUES	2.5-MIN VALUES
			LAT +NORTH -SOUTH	LONG +EAST -WEST	LAT +NORTH -SOUTH	LONG EAST	YEAR			
DEGREES										
VICTORIA		[VI]	48.5	-123.4	54.1	293.0	1964	XXX XXX XXX XXX	XXX XXX XXX XXX	
							1965	XXX XXX XXX XXX	XXX XXX XXX XXX	
							1966	XXX	XXX	
VIEQUES		[VIQ]	18.1	-65.4	29.6	03.8	1903	XXX XXX XXX XXX	XXX XXX XXX XXX	
							1904	XXX XXX XXX XXX	XXX XXX XXX XXX	
							1905	XXX XXX XXX XXX	XXX XXX XXX XXX	
							1906	XXX XXX XXX XXX	XXX XXX XXX XXX	
							1907	XXX XXX XXX XXX	XXX XXX XXX XXX	
							1908	XXX XXX XXX XXX	XXX XXX XXX XXX	
							1909	XXX XXX XXX XXX	XXX XXX XXX XXX	
							1910	XXX XXX XXX XXX	XXX XXX XXX XXX	
							1911	XXX XXX XXX XXX	XXX XXX XXX XXX	
							1912	XXX XXX XXX XXX	XXX XXX XXX XXX	
							1913	XXX XXX XXX XXX	XXX XXX XXX XXX	
							1914	XXX XXX XXX XXX	XXX XXX XXX XXX	
							1915	XXX XXX XXX XXX	XXX XXX XXX XXX	
							1916	XXX XXX XXX XXX	XXX XXX XXX XXX	
							1917	XXX XXX XXX XXX	XXX XXX XXX XXX	
							1918	XXX XXX XXX XXX	XXX XXX XXX XXX	
							1919	XXX XXX XXX XXX	XXX XXX XXX XXX	
							1920	XXX XXX XXX XXX	XXX XXX XXX XXX	
							1921	XXX XXX XXX XXX	XXX XXX XXX XXX	
							1922	XXX XXX XXX XXX	XXX XXX XXX XXX	
							1923	XXX XXX XXX XXX	XXX XXX XXX XXX	
							1924	XXX XXX XXX X		
VOSTOK		[VO]	-78.4	106.8	-89.1	94.9	1965		X	X
							1966	XXX XXX XXX XXX	X	X
							1967		XXX XXX XXX XXX	
VOYEKOVO	(LENINGRAD)	[VY]	59.9	30.7	56.2	117.3	1966			
VYSOKAYA DUBRAVA	(SVERDLOVSK)	[VD]	56.7	61.0	48.4	140.6	1964	X		X
							1965	XXX XXX XXX XXX	X	X XXX
							1966	XXX XXX XXX XXX	XXX XXX XXX XXX	
							1967	X X X	X X X	X X
							1968	XX XXX X	XX XXX X	
							1969			
WATHEROO	(GNANGARA)	[WA]	-30.3	115.8	-41.7	185.6	1919	XXX XXX XXX XXX		
							1920	XXX XXX XXX XXX		
							1921	XXX XXX XXX XXX		
							1922	XXX XXX XXX XXX		
							1923	XXX XXX XXX XXX		
							1924	XXX XXX XXX XXX		
							1925	XXX XXX XXX XXX		
							1926	XXX XXX XXX XXX		
							1927	XXX XXX XXX XXX		
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							1948	XXX XXX XXX XXX		
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							1950	XXX XXX XXX XXX		
							1951	XXX XXX XXX XXX		
							1952	XXX XXX XXX XXX		
							1953	XXX XXX XXX XXX		
							1954	XXX XXX XXX XXX		
							1955	XXX XXX XXX XXX		
							1956	XXX XXX XXX XXX		
							1957	XXX XXX XXX XXX		
							1958	XXX XXX XXX XXX		
WILKES		[WK]	-66.2	110.5	-78.4	179.0	1957		XXX XXX XXX XXX	
							1958		XXX XXX XXX XXX	
							1961	XX XXX	XX XXX	

CATALOGUE OF HOURLY AND 2.5 MINUTE VALUES ON MAGNETIC TAPE

MAGNETIC TAPE	NAME MASTER STATION LIST	CODE ON TAPE	GEOGRAPHIC				GEOMAGNETIC		HOURLY VALUES	2.5-MIN VALUES
			LAT	LONG	LAT	LONG	YEAR			
			+NORTH -SOUTH	+EAST -WEST	+NORTH -SOUTH	EAST				
DEGREES										
WILKES	[WK]	-66.2	110.5	-78.4	179.0	1964 1965 1966		JFM AMJ JAS OND	JFM AMJ JAS OND	
YAKUTSK	[YA]	62.0	129.7	50.9	193.8	1964 1965 1966 1967 1968 1969		X XXX XXX XXX XXX XXX X	X XXX XXX XXX XXX XXX XXX X XX	
YANGI-BAZAR	[YB]	41.3	69.6	32.3	144.0	1964 1965 1966 1967 1968 1969		XXX XXX XXX XXX XXX XXX XXX XXX XXX XXX XXX XXX	X XXX XXX XXX XXX XXX	X XXX X
YUZHNO-SAKHALINSK	[YUZ]	46.9	142.7	36.8	206.6	1966				X

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